IN THE US PATENT & TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS & INTERFERENCES

APPLICANT:	WEISSER	ATT'Y DOCKET: 870-003-174
SERIAL #:	10/ 506,477	CONF. #: 3038
FILED:	1 SEP. 2004	
EXAMINER:	V. DWIVEDI	ART UNIT: 3746

BRIEF ON APPEAL

Commissioner for Patents
PO BOX 1450
ALEXANDRIA VA 22313
Sir:

14 MAR. 2008

I REAL PARTY IN INTEREST

The real party in interest is EBM-PAPST ST. GEORGEN GmbH & Co. KG, the assignee by virtue of an assignment recorded 29 SEP. 2004 at Reel 15 199, Frame 0070.

II RELATED APPEALS & INTERFERENCES

There are believed to be no related appeals or interferences.

III STATUS OF CLAIMS

Independent claim 1 and its dependent claims 2-19 are pending. All claims are rejected. The claims retain their original wording, published 9 JUN. 2005 in US 2005-123 423-A1.

IV STATUS OF AMENDMENTS

A first amendment, to the specification, was filed 4 JUN. 2007 and has been entered. A further response and explanation dated 27 AUG. 2007 was submitted, but did not amend the claims. A Request for Panel Review was filed 5 DEC. 2007, but did not result in any modification of the Examiner's rejection.

V SUMMARY OF THE CLAIMED SUBJECT-MATTER

Motors are susceptible to short circuits and other malfunctions if excessive water achieves ingress into them.

The undersigned hereby certifies that this document is being submitted via EFS-WEB on MAR. 14, 2008.

/Milton M. Oliver/

Therefore, depending upon the intended industrial application, applicable industrial standards (such as DIN 40 050) require different levels of Ingress Protection (IP). For example, IP23 requires that the motor be somehow protected against water sprayed **vertically, or obliquely up to an angle of 60 degrees** to the vertical. The more stringent IP44 requires that the motor be somehow protected against splash water **from all directions**. Absolute protection against water ingress, i.e. complete fluid-tightness, cannot be achieved, as a practical matter, because some motor components are stationary, while a rotor turns during operation, and sealing at the interface between the stationary and rotating components is very difficult. Main claim 1 recites, in pertinent part, "a pot-shaped part ... forming a substantially fluid-tight annual space enclosing said internal stator and having a wall which extends in the manner of a canned motor through said air gap between the internal stator and the external rotor." Specification pages 5-6 describe a first embodiment of this structure, while pages 7-8 describe a second embodiment of this structure.

VI GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Action of 5 SEP. 2007 finally rejected claims 1-3 and 13-15 under section 102(b) as anticipated by SAITO USP 5,979,541. The Action of 5 SEP. 2007 finally rejected claims 4-5, 15 and 17 as either anticipated by, or obvious over, SAITO USP 5,979,541. The Action of 5 SEP. 2007 finally rejected claims 6-12, 16, 18 and 19 as unpatentable over SAITO in view of YOKOZAWA USP 5,650,678 and BLUMENBERG USP 5,650,676.

VII ARGUMENT

SAITO shows a cooling fan with a motor type commonly called a "claw pole" motor. As shown in FIG. 4, the stator 6 has a bobbin 64, having a coil 63 that is wound therearound, which bobbin 64 is supported in an interior of a yoke 62 (cf. col. 5, lines 53 - 55). The yoke 62 is shown in detail in FIG. 6. It has a first (upper) yoke 621 and a second (lower) yoke 624. The first yoke 621 has a disk-shaped first base part 622 and four first claw parts 623 provided in the outer periphery of the first base part 623 and extending downwardly. The second yoke 624 is constructed accordingly, and has four second claw parts 626 extending upwardly and engaging with the four first claw parts 623, cf. col. 5, lines 34 - 45. The operation of the claw pole motor is described at col. 8, lines 10 - 22.

According to col. 5, lines 45 - 48, "the first yoke 621 and the second yoke 624 are arranged as to engage without having the first claw parts 623 and the second claw parts 626, which extend in opposite directions, come into contact", i.e., it is taught that there is a space between the first and second claw parts, as shown in FIG. 6. This space between the first and second claw parts is necessary, because a contact between the first and second claw parts would result in a magnetic short circuit, making the motor inoperative or severely detracting from its efficiency. Thus, it is clear that fluids may pass from outside through the space between the first and second claw parts to the inside, i.e. the bobbin 64 and the coil 63.

Therefore, SAITO does not describe a "pot-shaped part, forming a substantially fluidtight annular space enclosing said internal stator" as recited in present independent claim 1. Instead, it seems that the Office interprets the section of the yoke 62 in FIG. 4 as belonging to a closed structure. This interpretation by the Office, however, absolutely contradicts the description and FIG. 6 of SAITO.

YOKOZAWA (US 5,650,678) also fails to describe a "pot-shaped part, forming a substantially fluidtight annular space enclosing said internal stator" as recited in present independent claim 1.

BLUMENBERG (US 5,650,676) does not describe a pot-shaped part, forming a substantially fluidtight annular space and having a wall which extends in the manner of a canned motor through the air gap between the internal stator and the external rotor (emphasis added).

Accordingly, pending independent claim 1 is clearly novel and unobvious with respect to SAITO, to YOKOZAWA and to BLUMENBERG and should be considered allowable.

As all other pending claims are dependent on pending independent claim 1, these claims should also be considered allowable.

VIII CLAIMS APPENDIX

1. A fan, comprising:

an external-rotor motor (103) having an internal stator (22) and an external rotor (34) separated therefrom by an air gap (52);

a bearing support tube (24) mounted on a base (46), the internal stator (22) being mounted on the support tube (24);

and

a pot-shaped part (4, 56; 58, 70) having one end connected to said base (46), forming a substantially fluid-tight annular space (54) enclosing said internal stator (22), and having a wall (56; 70) which extends in the manner of a canned motor through said air gap (52) between the internal stator (22) and the external rotor (34).

2. The fan of claim 1, wherein

an end of said bearing support tube (24) which is remote from said base (46) extends to a portion (6; 68) of said pot-shaped part (4; 68) and forms a substantially fluid-tight connection therewith, particularly by a plug-in connection.

3. The fan of claim 1, wherein the base (46) forms a substantially fluid-tight connection (10') with a fan housing (2).

4. The fan of claim 1, wherein said base (46) is fluid-tightly connected to the fan housing (2) by ultrasonic welding.

5. The fan of claim 1, wherein

said pot-shaped part (4; 56) has a welding bead (10) for formation of a welded connection.

6. The fan of claim 1, wherein said bearing support tube (24) is formed with a recess (14) in which

a spacer (18),

a retaining element (20) for securing the shaft (44; sic), and

a plurality of rotary bearings (16)

are provided.

7. The fan of claim 6, wherein said recess (14) of the bearing support tube (24) is configured as a blind bore (14).

8. The fan of claim 6, wherein the recess (14) of the bearing support tube (24) is so configured, at its closed end, that it radially guides a retaining clip (20) placed therein.

9. The fan of claim 6, wherein

the rotor is configured as an external rotor (34) with a rotor bell (38) onto which a rotor shaft (40) is secured;

between the rotor bell (38) and an inner ring of one of the rotary bearings (16), a spring (44) is provided, which is compressible during assembly, to facilitate engagement of a retaining clip (20) placed in the recess (14) of the bearing support tube (24) into a circumferential groove (48) formed on the rotor shaft (40).

10. The fan of claim 9, wherein the retaining clip (20) has at least one detent hook (21) which, in an assembled state, engages into the circumferential groove (48) formed on the rotor shaft (44; sic).

11. The fan of claim 1, wherein

the motor is an electronically commutated motor (103) whose rotor (34) has a rotor magnet (36) and has a stator (22) with a stator lamination stack (26), the stator being arranged, at least partially, radially inside the rotor magnet (36).

12. The fan of claim 11, wherein the rotor (34) is arranged substantially in magnetic equilibrium relative to stator lamination stack (26), in order to reduce or avoid any axially directed magnetic force between rotor (34) and stator (22).

13. The fan of claim 1, wherein

the pot-shaped part (6; 56) is integrally formed with the housing (2) of the fan.

14. The fan of claim 1, wherein

the base (46) connected to the bearing support tube (24) is integrally formed with the housing (2) of the fan.

15. The fan of claim 1, wherein

a fluid-tight connection between the pot-shaped part (58, 70) and base (46) is achieved by adhesion.

16. The fan of claim 1, wherein

the rotor (34) has a shaft (40) which is axially fixed by a securing ring (60) which engages into a circumferential groove of the shaft (40).

17. the fan of claim 1, wherein

a fluid-tight connection between the pot-shaped part (58, 70) and base (46) is achieved by welding.

18. The fan of claim 2, wherein said bearing support tube (24) is formed with a recess (14) in which a space (18), a retaining element (20) for securing the shaft (40) and a plurality of rotary bearings (16) are provided.

19. The fan of claim 18, wherein said recess (14) of the bearing support tube (24) is configured as a blind bore (14).

IX EVIDENCE APPENDIX

Appended hereto is a copy of FIG. 4 of SAITO, marked-up with an arrow to indicate how water could freely penetrate this structure, contrary to the Examiner's assertion that SAITO defines "a substantially fluid-tight annular space enclosing said internal stator" as recited in claim 1 of the present application.

X RELATED PROCEEDINGS APPENDIX

There are believed to be no related proceedings.

Applicant respectfully urges the Board to reverse the Final Rejection of claims 1-19, and to pass the application to allowance.

Respectfully submitted,
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